2001 Utah Senate Bill 61

- Increase the number of engineering and computer science graduates to advance the “well being of the State and its citizens.”

- Improve the quality of instructional programs
  - Faculty
  - Programs
  - Capital facilities
  - Equipment

- Broad Political Support

- Matching On-Going Funds

- Tech. Initiative Adv. Board
## State Engineering Initiative Support

<table>
<thead>
<tr>
<th>FY</th>
<th>On-Going</th>
<th>One-Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>$1,000,000</td>
<td>$2,500,000</td>
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<tr>
<td>2003</td>
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</tr>
<tr>
<td>2004</td>
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</tr>
<tr>
<td>2015</td>
<td>3,500,000</td>
<td>1,000,000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$244,000,000</strong></td>
<td><strong>$10,450,000</strong></td>
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## U of U Engineering Initiative Support

<table>
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<th>FY</th>
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<th>One-Time</th>
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<tr>
<td>2015</td>
<td>1,800,000</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>$6,969,667</strong></td>
<td><strong>$4,301,333</strong></td>
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</tbody>
</table>

Equivalent to a $350M Endowment
Engineering Freshman Enrollment

% of Total Count

- 2005: 7%
- 2006: 9%
- 2007: 8%
- 2008: 10%
- 2009: 10%
- 2010: 11%
- 2011: 12%
- 2012: 14%
- 2013: 14%
- 2014: 16%
- 2015: 16%
- 2016: 19%

Yearly Enrollment:
- 2005: 194
- 2006: 236
- 2007: 217
- 2008: 250
- 2009: 286
- 2010: 321
- 2011: 376
- 2012: 450
- 2013: 415
- 2014: 483
- 2015: 533
- 2016: 656
High School Engineering Classes

- Stacy Firth
- Olympus High
- Granite District
- Whole State
- Introduction to Engineering
- Fundamentals of Computer Science
- Engineering Design (Sr. Capstone)
Freshmen Demographics, 2004 to 2016

- Domestic Freshmen of Color: 10% to 31%
- Domestic Female Freshmen: 11% to 25%
- Out of State Domestic Freshmen: 15% to 33%
- Ave. ACT up 2 points
- Direct Admit Students Up
Engineering Degrees Granted

PhD, MS, BS

902

366

Engineering Initiative

• Promised 250 more graduates
• Produced 657 more per year
USTAR

- Stimulate economic development in Utah
- Recruit world-class researchers
- Build state-of-the-art interdisciplinary research facilities
USTAR Microscopy Core Facility

JEOL JEM 2800 Scanning TEM

FEI Helios Nanolab 650 FIB
USTAR Initiatives

- Nanoscale Photonic Imaging
- Diagnostic Imaging
- Personalized Medicine
- Circuits of the Brain
- Imaging Technology
- Nanotechnology Biosensors
- Wireless Nano Systems
- Biomedical Device Innovation
- Digital Media
- Renewable Energy
- Fossil Energy
- Micro/Nano Systems Integration
22 USTAR Faculty associated with Engineering

Guido Gerig
Tom Fletcher
Tolga Tasdizen
Orly Alter
Miriah Meyer

Mark Porter
Ling Zang

Gianluca Lazzi
Carlos Mastrangelo
Massood Tabib-Azar
Darrin Young

John White
Hamid Ghandehari
Alan Dorval

Cem Yuksel
Craig Caldwell

Shelley Minteer

Brian J. McPherson
John McLennan
Mano Misra

Hanseup Kim
Rajesh Menon
Tenure-Track Faculty Growth

- 282 Full-time Faculty
  - 198 Tenure Track
  - 17 Lecturing Faculty
  - 67 Research Faculty
CoE Research Expenditures

ASEE Data
Genetic Testing for Hereditary
- Breast and Ovarian Cancer BRACA 1 & BRACA 2
- Uterine Cancer
- Colorectal Cancer
- Pancreatic Cancer
- Prostate Cancer Type
Rapid Cycle PCR
- Respiratory Panel (20 viruses & bacteria)
- Blood Culture (27 bacteria & yeast)
- Gastrointestinal (22 bacteria, parasites & viruses)
- Meningitis/Encephalitis (14 bacteria, viruses, yeast)
- Water, Military and Homeland Security Applications

BioMérieux purchased for $450M in 2014
Growth in Technology Companies

• 1500 High Tech Companies to 5000+
• Utah is 7th in VC Investment, 3rd in VC Investment per capita
• Four Unicorns in 2015
  (Domo, Insidesales, Pluralsight, Qualtircs)
Ecosystem for Economic Growth

- Business-Friendly (taxes, regulation, labor law)
- Investment Community
- Infrastructure (airport, roads)
- Cost of Living
- Quality of Life
- Workforce
Utah Gross Domestic Product

Source: United States Federal Reserve FRED Database
Utah Tech Sector Employment
Graduates and Jobs

- BS
- MS
- Ph.D.
- Jobs
“Salt Lake City is frequently cited as a rising tech hub, thanks to a combination of low taxes, local schools funneling skilled workers into the market, suitable infrastructure for business, and a vibrant startup community.”

(Nick Kolakowski, Dice.com)
#1 in Economic Dynamism

Source: The 2016 State New Economy Index
#1 Best Economic Outlook

Source: American Legislative Exchange Council
Utah’s Economic Climate

Salt Lake City
- #1 Best Cities to Start a Career (WalletHub)
- #1 Top Cities for High Paying Jobs (Monster)
- #1 Least Stressed City, (CNNMoney)
- #2 America’s Next Boom Towns (Forbes)
- #2 Job creation among Large Metro Areas (US Bureau of Labor Statistics)
- #5 America’s Fastest-Growing Cities (Forbes)
- 2.7% unemployment rate (compared to 4.7% nationally)

Utah
- #1 Best State for Business (Forbes – 3rd year in a row)
- #1 America’s Top States for Business (CNBC)
- #1 Fastest Growing Tech States (Business Insider)
- #1 Small Business Friendliness (Ewing Marion Kauffman Foundation)
- #2 GDP Growth (U.S. Bureau of Economic Analysis)
- #2 Personal Income Growth (Pew Charitable Trusts)
- #3 States with Total Job Growth (US Bureau of Labor Statistics)
- #6 Top 10 States in which to Start a Small Business (TheStreet)
Government Investment in Engineering

- Utah Invested in Engineering Education
- Utah Invested in Engineering Research (by growing faculty)
- Increased Federal Research Funding
- Benefits to State Economy
  - Workforce
  - Spin-out Companies
  - Entrepreneurial Culture
  - Ecosystem